

Notice of Allowability

Application No.

10/505,337

Examiner

Yong Chu

Applicant(s)

INGOLD ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE of 10/505,337 filed on 6/6/2006.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 6/6/2006
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

This is a RCE of Application 10/505,337. The Notice of Allowance for the original application has been mailed to Applicants on 7 March 2006. Applicants have submitted new IDS for consideration on 6 June 2006. This Office action is for continued examination.

Claims 1-23 are pending in the instant application. Claim 24 is cancelled by Preliminary Amendment filed on 23 August 2004. Claims 13-23 have been canceled by the Examiner's amendment as non-elected claims. Claims 1-12 are examined.

Information Disclosure Statement

Applicant's Information Disclosure Statements, filed on 6 June 2006, have been considered. Please refer to Applicant's copies of the PTO-1449 submitted herewith.

Priority

This application is a 371 of PCT/US03/05723, filed on 25 February 2003. Acknowledgement is made of Applicant's claim for U.S. Provisional Patent Application 60/360,432 under 35 U.S.C. §119(e), filed on 28 February 2002.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided

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by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended with authorization from Applicant's representative Mr. Robert Brink on 13 July 2006, as follows:

Cancel claims 13-23.

Reasons for Allowance

The present invention is directed to a process for the preparation of thiazole related compounds. The invention comprising three steps: a) treating aryl halide with organ-metallic reagent (e.g. alkyl lithium, magnesium or Grignard-ZnX₂ reaction) to convert aryl to aryl nucleophile, which is well-known in the art; b) reacting the resulting aryl nucleophile with elemental sulfur to make sulfonylphenyl intermediate, which is novel; c) reacting the resulting sulfonylphenyl intermediate with heteroaryl compound with leaving group at alpha- carbon position. In addition to the closest two prior arts of records of PCT/US01/49230 (Cadilla *et al.*) and PCT/US01/22615 (Brooks *et al.*), which has been discussed in the previous Office action under section Reasons for Allowance dated on 7 March 2006, there are two new references found by Examiner due to the examination of newly provided IDS. These two references are *J. Org. Chem.* (Malmstrom *et al.*), **1998**, 63, 3318-3323, and *J. Org. Chem.* (Miller *et al.*), **1985**, 50, 2121-2123.

J. Org. Chem. (Malmstrom *et al.*), **1998**, 63, 3318-3323 discloses a process for making **compound 15** (Scheme 2) on page 3319, and 3323, containing moiety of allyl-sulfur-carbon bond by reaction phenyl bromide with t-butyl lithium, sulfur and allyl

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bromide in one-pot reaction. However, there is no dihalo zinc used as disclosed by the instant application.

J. Org. Chem. (Miller et al.), **1985**, 50, 2121-2123 discloses a process for making (*p*-methoxyphenyl)zinc chloride (a intermediate of **compound 10**, (E)-1,2-diphenyl-1-(*p*-methoxyphenyl)-1-butene) by reacting anhydrous zincchloride with (*p*-methoxyphenyl) lithium. However, there is no suggestion for the step (a) of claim1 in the instant application.

Even though, all three steps (a-c) of claim 1 of instant application disclosed indirectly by the two said references, there is no suggestion that the instant application as whole is obvious over the said prior arts.

Therefore, claims 1-12 are allowable.

Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Chu whose telephone number is 571-272-5759. The examiner can normally be reached on 7:00 am - 3:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. M^gKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

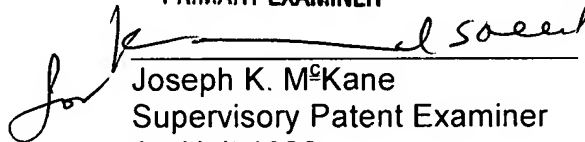
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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